

WHAT IS CLAIMED IS:

1. A panel for a liquid crystal display comprising:

a substrate;

color filters having grooves and formed on the substrate; and

a common electrode formed on the color filters.

2. A panel for a liquid crystal display as recited in claim 1 wherein the depth of the grooves is smaller than the thickness of the color filter.

3. A panel for a liquid crystal display as recited in claim 1 further comprising a black matrix formed on the substrate.

4. A panel for a liquid crystal display as recited in claim 3 wherein the grooves based on the black matrix define the pixel areas.

5. A panel for a liquid crystal display as recited in claim 4 wherein the black matrix has portions overlapping the grooves.

6. A liquid crystal display comprising:

a first substrate including pixel electrodes having apertures;

a second substrate including color filters having grooves and a common electrode formed on the color filters, wherein said second substrate faces said first substrate.

7. A liquid crystal display as recited in claim 6 wherein the grooves of the color filters overlap the pixel electrodes.

8. A liquid crystal display as recited in claim 6 wherein the depth of the grooves is smaller than the thickness of the color filters.

9. A liquid crystal display as recited in claim 6 further comprising a black matrix formed on the second substrate.

10. A liquid crystal display as recited in claim 9 wherein the black matrix has portions overlapping the grooves.

11. A liquid crystal display as recited in claim 6 wherein the grooves and the apertures form closed domains when they are viewed from above.

5 12. A liquid crystal display as recited in claim 6 wherein the grooves and the apertures are symmetrically arranged relative to each other.

13. A liquid crystal display as recited in claim 6 wherein the apertures have a first portion extending in a first direction and a second portion extending in a second direction that is different from the first direction.

10 14. A liquid crystal display as recited in claim 13 wherein the first direction and the second direction are perpendicular to each other.

15 15. A liquid crystal display as recited in claim 6 further comprising a liquid crystal layer interposed between the first substrate and the second substrate and having liquid crystal molecules of which long axes are vertically aligned relative to the first and the second substrates in the absence of an electric field.

16. A liquid crystal display as recited in claim 15 wherein the liquid crystal molecules have negative dielectric anisotropy.

20 17. A liquid crystal display as recited in claim 16 wherein the liquid crystal molecules have chirality.

18. A liquid crystal display as recited in claim 15 further comprising a first and a second polarizing films respectively attached on the outer surfaces of the first and the second substrates, wherein polarizing axes of the first and the second polarizing films are perpendicular to each other.

19. A liquid crystal display as recited in claim 15 wherein a plurality of minute domains are formed in a pixel area by the grooves and the apertures.

20. A liquid crystal display as recited in claim 19 wherein the minute domains' average direction of the long axes of liquid crystal molecules are directed toward two directions.

21. A liquid crystal display as recited in claim 19 wherein the minute domains' average direction of the long axes of liquid crystal molecules are directed toward four directions.

22. A liquid crystal display as recited in claim 20 wherein the average long axes make an angle of 40° to 50° with the polarizing directions of the first and the second polarizing films.

23. A liquid crystal display as recited in claim 21 wherein the average long axes make an angle of 40° to 50° to the polarizing directions of the first and the second polarizing films.

24. A liquid crystal display comprising:

a first substrate;

a pixel electrode formed on the first substrate;

a second substrate facing with the first substrate; and

a common electrode formed on the second substrate,

wherein the common electrode having rugged non-smooth portions facing the pixel electrodes.

25. A liquid crystal display recited in claim 24 further comprising color filters having grooves and formed on the second substrate, and wherein the rugged non-smooth portions of the common electrode are formed due to the

grooves of the color filters.

26. A liquid crystal display recited in claim 24 further comprising a black matrix formed on the second substrate, and wherein portions of the black matrix overlap the rugged non-smooth portion of the common electrode.

5 27. A method of manufacturing a panel for a liquid crystal display comprising the steps of:

forming a black matrix on a substrate;

forming color filters having grooves; and

forming a common electrode on the color filters.

10 28. A method of manufacturing a panel for a liquid crystal display recited in claim 27 wherein the common electrode is formed by two depositions of ITO.

15 29. A method of manufacturing a panel for a liquid crystal display recited in claim 27 wherein the step of forming color filters having grooves comprises the substeps of:

coating and patterning a red colored photoresist to form red color filters having grooves located in a pixel area defined by the black matrix;

coating and patterning a green colored photoresist to form green color filters having grooves located in a pixel area; and

20 coating and patterning a blue colored photoresist to form blue color filters having grooves located in a pixel area.

30. A method of manufacturing a panel for a liquid crystal display recited in claim 27 wherein the step of forming the color filters comprises the substeps of:

sequential forming red, green, and blue color filters by coating and
patterning a red colored photoresist, a green colored photoresist, and a blue
colored photoresist; and
patterning the red, green and blue color filters to form grooves.